

**NPDES  
INSPECTION REPORT**

**CITY OF MACKAY  
WASTEWATER TREATMENT FACILITY  
MACKAY, IDAHO**

**September 22, 2011**

**Prepared by:  
William Teuscher PE  
Idaho Department of Environmental Quality (DEQ)  
Idaho Falls Regional Office**

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- A. Vicinity Map
- B. January 2011 DMR, Chain of Custody forms and Lab Analysis Reports.
- C. QAP title page and Page 20, O&M Title Page, Testing Equipment Data Sheets
- D. May 18, 2009 EPA Correspondence. Cover Page of NPDES Permit
- E. Facility Photographs



(Unless otherwise noted, all details in this inspection report were obtained from conversations with facility personnel Ken Day, Public Works Supervisor.

**I. Facility Information**

Facility Name: City of Mackay Wastewater Treatment Plant (Facility)

Facility Type: Sewage Treatment Plant

Facility Location: Off White Knob Street, ~ ¼ mile south of City Hall  
Latitude: 43° 54' 7.91"N  
Longitude: 113° 36' 39.86"W

Mailing Address: P.O. Box 509  
Mackay, Idaho 83251

Facility Contacts: Ken Day, Public Works Supervisor  
Otto Higbee, Mayor

Facility Numbers: Ph: (208) 588-2274 (City Hall)

Permit Number: ID-002302-7

Permit Status: Permit effective Date: June 1, 2004  
Permit expiration Date: May 31, 2009.  
Current permit is administratively extended per May 18  
2009 EPA letter.

SIC Code: 4952

**II. Inspection Information**

Inspection Date/Time: September 22, 2011 10:00 AM to 1:30 PM

Inspectors: William Teuscher PE (DEQ)

Weather: Sunny 68° F

Purpose: Determination of compliance with the NPDES Permit and  
the Clean Water Act.

**III. Owner and Operator Information**

The Facility is currently owned and operated by the City of Mackay, Idaho. Ken Day is the current certified operator for the wastewater treatment and collection facility.

#### **IV. Inspection Entry**

This was an announced inspection. The City of Mackay (City) was contacted by me on September 6, 2011 to schedule the inspection for September 22, 2011.

I arrived at City Hall at 10:00AM and met with Ken Day the Public Works Supervisor. I presented my credentials to Mr. Day. I told him that the purpose of the visit was to perform an NPDES inspection of the wastewater treatment facility for EPA. Mr. Day allowed me access to the facility. I was accompanied throughout the inspection by Mr. Day.

#### **V. Inspection Chronology**

On September 22, 2011, the inspection began with an entry interview, followed by a file review and a tour of the Facility. The Facility tour included an inspection of the treatment unit operations. The points of sampling for the influent and effluent flows were also reviewed and verified. As part of the file review, the Facility's Quality Assurance Plan (QAP), the Operations and Maintenance (O&M) Plan and discharge monitoring reports (DMRs) were reviewed. The NPDES permit was also reviewed to verify the self-monitoring efforts. The inspection then concluded with an exit interview.

#### **VI. Background**

The permit authorizes the Facility to discharge to the Big Lost River through outfall 001. According to Mr. Day, the Facility was last upgraded in 1988 to its current configuration.

In terms of the collection system all wastewater flows are gravity fed to one main lift station that pumps all wastewater flows to the wastewater treatment facility. Not much has changed to the collection system since its initial installation other than a few gravity collections lines have been added to accommodate very minimal growth and development over the years. The population and flows to the wastewater facility have not changed much.

#### **VII. Scope of the Inspection**

The scope of this inspection was to review monitoring activities, records and reports pertaining to the NPDES permit and to visually inspect the wastewater treatment unit processes, general operation and maintenance and self-monitoring of the system. The inspection also included visual inspection of outfall locations to the receiving waters.

This inspection did not evaluate the laboratory procedures because an offsite independent lab has been used for the lab analysis. The accuracy of the existing flow meters were not verified by flow monitoring. The operator's influent and effluent water quality sampling procedures were not evaluated.

## **VIII. Records Review**

As part of the records review I examined the NPDES permit, 2010 and 2011 DMRs, associated lab sheets, Quality Assurance Plan (QAP), and the Operation and Maintenance (O&M) Manual for the treatment facility.

The NPDES permit was on file and available for my review. The NPDES permit required that the City submit the monthly DMRs to EPA and DEQ. There were no missing DMRs from the City files. DMRs from the DEQ file and the City files were compared for corresponding reported values for effluent concentrations and loadings. The January 2011 DMR was also reviewed for accuracy and proper reporting of all the NPDES permit limitations and monitoring requirements per Table 1 of the permit. One of the five e-coli bacteria samples taken for January 2011 exceeded the required preservation temperature 10° C. The January 19, 2011 e-coli sample was 13.8° C. A copy of the January 2011 DMR along with the associated lab sheets and Chain of Custody forms are found in Attachment B.

Also on record in the files was the required QAP which was completed and dated March 2009 as required by the NPDES permit. The current O&M manual was also presented to me upon my request. The O&M manual was completed August of 1988. During the review of the QAP it was noted that the holding time for the e-coli sample was listed as 30 hours. This holding time is not correct (see attachment C for title page and page 20 of the QAP). Part II.C of the Permit specifies that monitoring must be conducted according to test procedures approved under federal regulations at 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 503. Per this Federal Register/Vol.72 No. 57 Table II the required holding time for e-coli samples is 6 hours.

I mentioned that the QAP should be modified to incorporate the proper testing procedure and holding times for all wastewater parameters. Mr. Day mentioned that the QAP had listed some of the testing procedures that are required for public drinking water systems. Even though the QAP had listed the E-coli sample holding time to be 30 hours the actual Chain of Custody form reflected that the e-coli samples taken for the month of January 2011 was held within the required 6 hour holding time. (See attachment B January 2011 Chain of Custody forms).

The City's file also showed that their application for an updated NPDES permit had been submitted to EPA April 3, 2009 along with the surface water quality monitoring report. EPA had administratively extended the current permit (See EPA letter to City dated May 18, 2009 in Attachment D).

I asked Mr. Day if he has retained all records pertaining to the NPDES permit for five years and he said he had.

## **IX. Waste Management Process**

The Facility currently utilizes a lagoon system to treat wastewater. The system consists of two lagoons. The first lagoon is equipped with three floating surface aerators and the second lagoon cell is a facultative cell. After the lagoon treatment the effluent is then disinfected with chlorine gas. The effluent flows through a buried circular contact chamber and is then monitored by way of a stilling basin, float level monitor controlled by a V-notch weir. The effluent from the Facility is discharged to the Big Lost River through outfall 001. The out fall consists of an open channel for about 200 feet and then is piped for about 150 feet to the Big Lost River where the pipe terminates above the river water level on the side of the river bank where riprap has been placed to dissipate the flow and prevent erosion to the river bank and stream bed.

Solids accumulate on the bottom of the lagoons and according to Mr. Day, the City has never removed any biosolids from the lagoons.

At the time of inspection, all treatment unit processes were operational. (See Facility Photographs in Attachment E). However, the aerators were not turned on and the Facility was not currently discharging. The aerators were turned off and flow from the lagoons to the discharge point was shut off so the City could perform seepage or leakage tests on the lagoons required by the State of Idaho Wastewater Rules, IDAPA 58.01.16.

I asked Mr. Day how often the flow meters are calibrated. He said that they are calibrated once a year and that he does the calibration himself. The Calibration for the influent flow meter is done by comparing the wet well draw down volume versus the recorded value on the influent meter. The effluent flow meter is calibrated by comparing the flow over the V-notch weir by measuring the water depth at the crest of the weir.

The lagoons had a lot of cattails growing around the dike areas. Cell 1 of the lagoons was covered with a mat of duckweed. Mr. Day mentioned that he had not had the opportunity to spray the cattails or the duckweed this year (see Facility Photographs in Attachment E).

## **X. Facility Sample Collection and Analyses**

The sample collection and analyses duties at the Facility are conducted by Mr. Day. The Chain of Custody forms showed that Mr. Day was the one collecting the wastewater samples required by the NPDES Permit. He also verified that he was the one who conducts the onsite sampling and testing of pH and chlorine residual.

The DMRs are filled out by Mr. Day and then sent to Mayor Otto Higbee for his signature as the Principle Executive Officer. The DMRs for 2011 were reviewed up to the month of August 2011. All 2010 DMRs were also reviewed during this



inspection. All of the reported effluent parameters for 2010 and 2011 were within the required NPDES permit loadings and concentration limits.

The parameters analyzed onsite using monitoring equipment include flow, pH, total residual chlorine, dissolved oxygen and temperature.

Biochemical oxygen demand (BOD), total suspended solids (TSS), *Escherichia coli* (E. coli), total phosphorus and total ammonia are analyzed by outside laboratories. Magic Valley Labs (MVL) in Twin Falls, ID analyzes the samples for all the parameters except for E. coli. The Pocatello, ID laboratory of MVL conducts the E. coli analysis. The final certificate of analysis is provided to the City by MVL - Twin Falls.

I asked Mr. Day where the influent and effluent samples are taken during the month. Mr. Day said that the influent samples are taken at the main lift station prior to the lagoons after all gravity collection lines converge. The effluent samples are taken at the flow control structure at the V-notch weir outfall prior to discharge to the open ditch adjacent to the chlorination building.

#### **XI. Areas of Concern**

This inspection included a review of the treatment system, the sample collection and analyses procedures, and documentation required by the Permit. During the course of this inspection, I observed and identified the following areas of concern:

- A. Quality Assurance Plan (QAP) Part I.D of the Permit specifies that the permittee must develop and implement a quality assurance plan (QAP) for all monitoring required by the Permit. The current QAP identified the incorrect holding time (30 hours) for e-coli bacteria. The QAP should be modified to show 6 hours maximum holding time for e-coli bacteria per 40 CFR Part 136 or, in the case of sludge use or disposal, approved per 40 CFR Part 503. All other testing methods, preservation techniques should be reviewed and updated to assure compliance to 40 CFR Part 136 and 40 CFR Part 503.
- B. Monitoring Procedures and Proper Operation and Maintenance Part II.C of the Permit specifies that monitoring must be conducted according to test procedures approved under federal regulations at 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 503. Part III.E of the Permit specifies that the permittee must at all times properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.

Based upon the January 2011 DMR and applicable chain of custody form for the January 19, 2011 sample from Magic Valley Labs, the E. coli bacteria sample temperature was 13.8 °C which exceeded the 10 °C preservation temperature required by EPA approved methods per the Federal Register /Vol 72, No.57/ March

26, 2007/Rules and Regulations Table II. The exceedance of the preservation temperature was for only one (1) of the five (5) e-coli bacteria samples taken for the month of January 2011.

**XII. Additional Observations**

- A. Proper Operation and Maintenance Part III.E of the Permit specifies that the permittee must at all times properly operate and maintain all facilities and systems of treatment and control. Vegetation including duckweed and cattails are growing in lagoon #1 (See Attachment C for photographs of the treatment lagoons).

**XIII. Inspection Sampling**

Samples were not collected by DEQ at the time of this inspection.

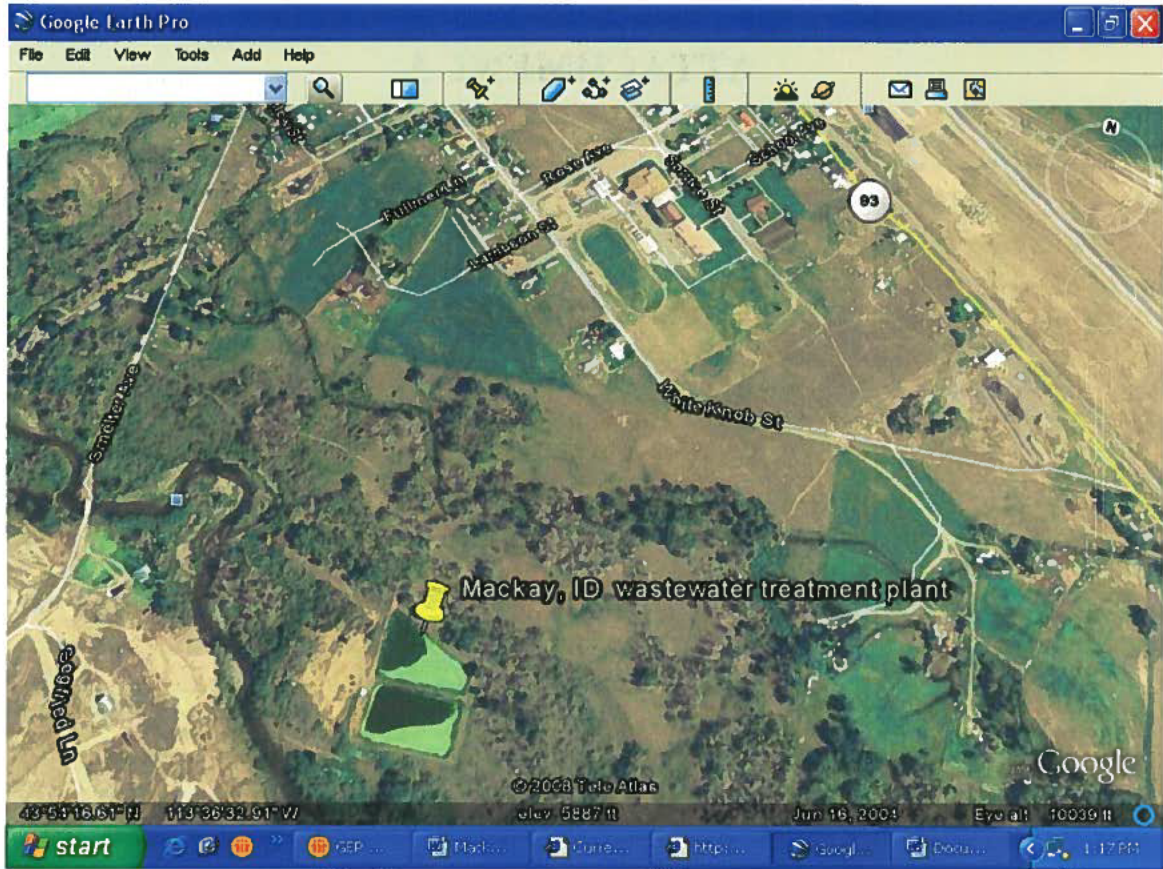
**Report Completion Date: September 22, 2011**

**Lead Inspector Signature: **

## **ATTACHMENT A**

### **Vicinity Map**

**City of Mackay  
Wastewater Treatment Facility  
Mackay, Idaho  
(September 22, 2011 Inspection)**





## **ATTACHMENT B**

### **January 2011 DMR, Chain of Custody forms and Lab Analysis Report**

**City of Mackay  
Wastewater Treatment Facility  
Mackay, Idaho  
(September 22, 2011 Inspection)**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0064

PERMITTEE NAME/ADDRESS (Include Facility Name, location if Different)

NAME: MACKAY, CITY OF  
ADDRESS: P.O. BOX 509  
MACKAY, ID 83251

FACILITY: MACKAY CITY OF  
LOCATION: 203 SOUTH MAIN STREET  
MACKAY, ID 83251

ATTN: KENNETH DAY, PUBLIC WORKS SUPV

PERMIT NUMBER	DISCHARGE NUMBER
00022027	001 A

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
01/01/2011	01/31/2011

DMR Mailing ZIP CODE: 83251  
MINOR (SUBR 05) \$  
External Outfall

No Discharge ☐

PARAMETER	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
BOD, 5-day, 20 deg. C	3.4	68	1b/d	< 3	45	mg/L	0	01/30	Grab
00310 10 Effluent Gross	PERMIT REQUIREMENT	MO AVG	1b/d	MO AVG	124	mg/L	0	01/30	Grab
BOD, 5-day, 20 deg. C	3.4	68	1b/d	< 3	45	mg/L	0	01/30	Grab
00310 G.O. Raw Sewage Influent	PERMIT REQUIREMENT	MO AVG	1b/d	MO AVG	3	mg/L	0	01/30	Grab
BOD, 5-day, 20 deg. C	3.4	68	1b/d	< 3	45	mg/L	0	01/30	Grab
00310 W.O. See Comments	PERMIT REQUIREMENT	MO AVG	1b/d	MO AVG	3	mg/L	0	01/30	Grab
pH	8.0	6.5	INST MIN	8.1	9	SU	0	05/07	Grab
00400 10 Effluent Gross	PERMIT REQUIREMENT	MO AVG	1b/d	MO AVG	3	mg/L	0	01/30	Grab
Solids, total suspended	3.4	68	1b/d	MO AVG	213	mg/L	0	01/30	Grab
00530 10 Effluent Gross	PERMIT REQUIREMENT	MO AVG	1b/d	MO AVG	3	mg/L	0	01/30	Grab
Solids, total suspended	3.4	68	1b/d	MO AVG	213	mg/L	0	01/30	Grab
00530 G.O. Raw Sewage Influent	PERMIT REQUIREMENT	MO AVG	1b/d	MO AVG	3	mg/L	0	01/30	Grab
Solids, total suspended	3.4	68	1b/d	MO AVG	213	mg/L	0	01/30	Grab
00630 W.O. See Comments	PERMIT REQUIREMENT	MO AVG	1b/d	MO AVG	3	mg/L	0	01/30	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
010 J. H. Gies / Mayor	[Signature]	208-588-2274	02/10/2011
TYPED OR PRINTED		AREA CODE	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (reference to attachments here)

W - EFFLUENT WEEKLY AVERAGE

EPA Form 3330-1 (Rev. 10/10) Previous editions may be used.



PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: MACKAY, CITY OF  
ADDRESS: P.O. BOX 509  
MACKAY, ID 83251

FACILITY: MACKAY, CITY OF  
LOCATION: 203 SOUTH MAIN STREET  
MACKAY, ID 83251

ATTN: KENNETH DAY, PUBLIC WORKS Supt

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

ID0023027	001-A
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
FROM 07/01/2011	TO 07/31/2011

DMR Mailing ZIP CODE: 83251  
MINOR (SUBR 08) \$

External Outfall

No Discharge ☐

Form Approved  
OMB No. 2040-0054

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	UNITS			
Flow, in conduit or thru treatment plant	MEASUREMENT	0.138	0.152	Mgd/d	*****	*****	*****	0	Cont	Realtime
50050 10 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DPD MAX	Mgd/d	*****	*****	*****	0	Continuous	Recorder
Chlorine, total residual	SAMPLE MEASUREMENT	0.40	*****	lb/d	*****	*****	mg/L	0	05/07	Grab
50060 10 Effluent Gross	PERMIT REQUIREMENT	MO AVG	*****	lb/d	*****	*****	mg/L	0	05/07	Grab
Chlorine, total residual	SAMPLE MEASUREMENT	0.46	*****	lb/d	*****	*****	mg/L	0	01/07	Grab
50060 W0 See Comments	PERMIT REQUIREMENT	1.1 WQCY AVG	*****	lb/d	*****	*****	mg/L	0	Weekly	Grab
51040 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	#/100 mL	0	05/30	Grab
BOD, 5-day, percent removal	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	%	0	01/30	Calcd
81010 K0 Percent Removal	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	%	0	Monthly	Calcd
Solids, suspended percent removal	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	%	0	01/30	Calcd
81011 K0 Percent Removal	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	%	0	Monthly	Calcd

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE AREA CODE	NUMBER	DATE
Chas J. Higbee / Mayor	<i>Chas J. Higbee</i>	208	588-2174	02/10/2011
TYPED OR PRINTED				

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

W = EFFLUENT WEEKLY AVERAGE

Form Approved (Rev. 9/1/06) Previous editions may be used.

127152010

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## CHAIN OF CUSTODY

**Chain of Custody 1/4/11** (Photographed September 22, 2011 by William Teuscher)



MAGIC VALLEY LABS, INC  
1448 E. CENTER ST., STE H  
POCATELLO, ID 83201  
208-478-1855

Laboratory Supervisor - Brenda Ellis  
LAB ID# ID000964

PWS # 7190032  
CITY OF MACKAY  
ATTN: KEN DAY  
PO BOX 509  
MACKAY, ID 83251

### NON-DRINKING WATER ANALYSIS REPORT

Date Collected: 01/04/11  
Time Collected: 11:05

Location: LAGOON EFFLUENT

Date Received: 01/04/11  
Time Received: 14:30

Collector: KEN DAY  
Chlorine Residual: 0.30

Sample #	Test / Method Code	Result	Date / Time Analyzed	Analyst
701-573	<i>E. COLI</i> / SM9223BQT/ COLISURE	1 MPN/100ML	01/06/11 10:00	AM





## CHAIN OF CUSTODY

**Chain of Custody 1/19/11** (Photographed September 22, 2011 by William Teuscher)



MAGIC VALLEY LABS, INC  
1448 E. CENTER ST., STE H  
POCATELLO, ID 83201  
208-478-1855

Laboratory Supervisor – Brenda Ellis  
LAB ID# ID000964

PWS # 7190032  
CITY OF MACKAY  
ATTN: KEN DAY  
PO BOX 509  
MACKAY, ID 83251

### NON-DRINKING WATER ANALYSIS REPORT

Date Collected: 01/19/11  
Time Collected: 10:00

Location: LAGOON EFFLUENT

Date Received: 01/19/11  
Time Received: 14:00

Collector: KEN DAY  
Chlorine Residual: 0.40

Sample #	Test / Method Code	Result	Date / Time Analyzed	Analyst
701-577	<i>E. COLI</i> /SM9223BQT/ COLISURE	<1 MPN/100ML	01/20/11 15:00	AM

Lab Report 1/19/11 (Photographed September 22, 2011 by William Teuscher)





210 Addison Ave, PO BOX 1867, Twin Falls ID 83301 (208) 733-4250 FAX (208) 734-2539  
1448 E Center Ste H, Pocatello ID 83201 (208) 478-1855 FAX (208) 478-4350

# MAGIC VALLEY LABS, Inc.

## CHAIN OF CUSTODY

Name:	City of Mackay	PWS #:	7190032	Compliance:	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Turn Around Time & Reporting	Normal 24 hour 48 hour Other:
Address:	PO Box 5091	Project Manager:	Ken Day			Phone	<input checked="" type="checkbox"/> Mail <input type="checkbox"/> Fax <input type="checkbox"/> Email
City:	Mackay	State:	ID	Zip:	83251	Collector:	Ken Day
Phone:	208-549-4804	Purchase Order #:				Receiving Requested By:	1/1/11
Fax:	588-2274					All test order requests must be approved	
Email:	mackaywater@ida.net					ANALYSIS REQUESTED	

Lab Use Only  
SAMPLE ID No.

SAMPLE LOCATION /  
CLIENT SAMPLE ID

COLLECTION  
DATE TIME

# of containers

BOD/T

TSS

EC

Coliform

1090261

1090271

Sewer Influent  
Lagoon Effluent  
Lagoon Effluent

1/24/11 9:10a  
1/24/11 10:00a  
1/24/11 10:00a

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Retrieved by

Received by

Retrieved by

Ken Day

Ken Day

Ken Day

Company City of Mackay

Company City of Mackay

Company City of Mackay

Date 1/24/11

Date 1/24/11

Date 1/24/11

Time 11:55

Time 11:55

Time 11:55

Lab Use Only

Received Initial:

Label & COC Agreed:

YES

YES

YES

NO

NO

NO

YES

YES

YES

NO

NO

NO

YES

YES

YES

NO

NO

NO

YES

YES

YES

NO

NO

NO

YES

YES

YES

NO

NO

NO

Chain of Custody 1/24/11 (Photographed September 22, 2011 by William Teuscher)





MAGIC VALLEY LABS, INC  
1448 E. CENTER ST., STE H  
POCATELLO, ID 83201  
208-478-1855

Laboratory Supervisor - Brenda Ellis  
LAB ID# ID000964

PWS # 7190032  
CITY OF MACKAY  
ATTN: KEN DAY  
PO BOX 509  
MACKAY, ID 83251

### NON-DRINKING WATER ANALYSIS REPORT

Date Collected: 01/24/11  
Time Collected: 10:00

Location: LAGOON EFFLUENT

Date Received: 01/24/11  
Time Received: 15:05

Collector: KEN DAY  
Chlorine Residual: 0.40

Sample #	Test / Method Code	Result	Date / Time Analyzed	Analyst
701-578	E. COLI/SM9223BQT/ COLISURE	<1 MPN/100ML	01/25/11 16:30	AM

Lab Report 1/24/11 (Photographed September 22, 2011 by William Teuscher)

**MAGIC VALLEY LABS**

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

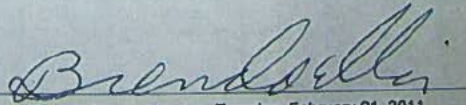
**KEN DAY  
MACKAY CITY OF**

**PO BOX 509  
MACKAY ID 83251**

Collection Date	1/24/2011	Received Date	1/24/2011	Location
Collection Time	10:00 AM	Received Time	3:05 PM	LAGOON EFFLUENT

Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst
1090271	BOD SM5210B	<3	1/31/2011	JD
1090272	TSS SM2540D	3	1/28/2011	JD

Signature



Report Date: Tuesday, February 01, 2011

**Lab Report 1/24/11** (Photographed September 22, 2011 by William Teuscher)



MAGIC VALLEY LABS  
210 Addison Ave / PO Box 1867  
Twin Falls ID 83303-1867  
Phone: (208) 733-4250  
Fax: (208) 734-2539

KEN DAY  
MACKAY CITY OF

PO BOX 509  
MACKAY ID 83251

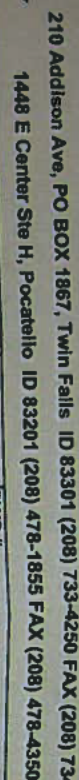
Collection Date	1/24/2011	Received Date	1/24/2011	Location	
Collection Time	9:10 AM	Received Time	3:05 PM	SEWER INFLUENT	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
1090261	BOD SM5210B	124	1/31/2011	JD	
1090262	TSS SM2540D	213	1/28/2011	JD	

Signature



Report Date: Tuesday, February 01, 2011

Lab Report 1/24/11 (Photographed September 22, 2011 by William Teuscher)



**MAGIC VALLEY LABS, Inc.**

## CHAIN OF CUSTODY

[illegible]





MAGIC VALLEY LABS, INC  
1448 E. CENTER ST., STE H  
POCATELLO, ID 83201  
208-478-1855

Laboratory Supervisor – Brenda Ellis  
LAB ID# ID000964

PWS # 7190032  
CITY OF MACKAY  
ATTN: KEN DAY  
PO BOX 509  
MACKAY, ID 83251

### NON-DRINKING WATER ANALYSIS REPORT

Date Collected: 01/26/11  
Time Collected: 11:00

Location: LAGOON EFFLUENT

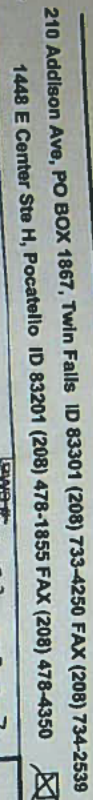
Date Received: 01/26/11  
Time Received: 13:40

Collector: KEN DAY  
Chlorine Residual: 0.40

Sample #	Test / Method Code	Result	Date / Time Analyzed	Analyst
701-580	<i>E. COLI</i> / SM9223BQT/ COLISURE	<1 MPN/100ML	01/27/11 16:00	AM

Lab Report 1/26/11 (Photographed September 22, 2011 by William Teuscher)





**MAGIC VALLEY LABS, Inc.**

## CHAIN OF CUSTODY

[illegible]

**Chain of Custody 1/31/11** (Photographed September 22, 2011 by William Teuscher)





MAGIC VALLEY LABS, INC  
1448 E. CENTER ST., STE H  
POCATELLO, ID 83201  
208-478-1855

Laboratory Supervisor - Brenda Ellis  
LAB ID# ID000964

PWS # 7190032  
CITY OF MACKAY  
ATTN: KEN DAY  
PO BOX 509  
MACKAY, ID 83251

### NON-DRINKING WATER ANALYSIS REPORT

Date Collected: 01/31/11  
Time Collected: 10:30

Location: LAGOON EFFLUENT

Date Received: 01/31/11  
Time Received: 15:00

Collector: KEN DAY  
Chlorine Residual: 0.40

Sample #	Test / Method Code	Result	Date / Time Analyzed	Analyst
701-581	E. COLI /SM9223BQT/ COLISURE	<1 MPN/100ML	02/01/11 16:00	AH

Lab Report 1/31/11 (Photographed September 22, 2011 by William Teuscher)

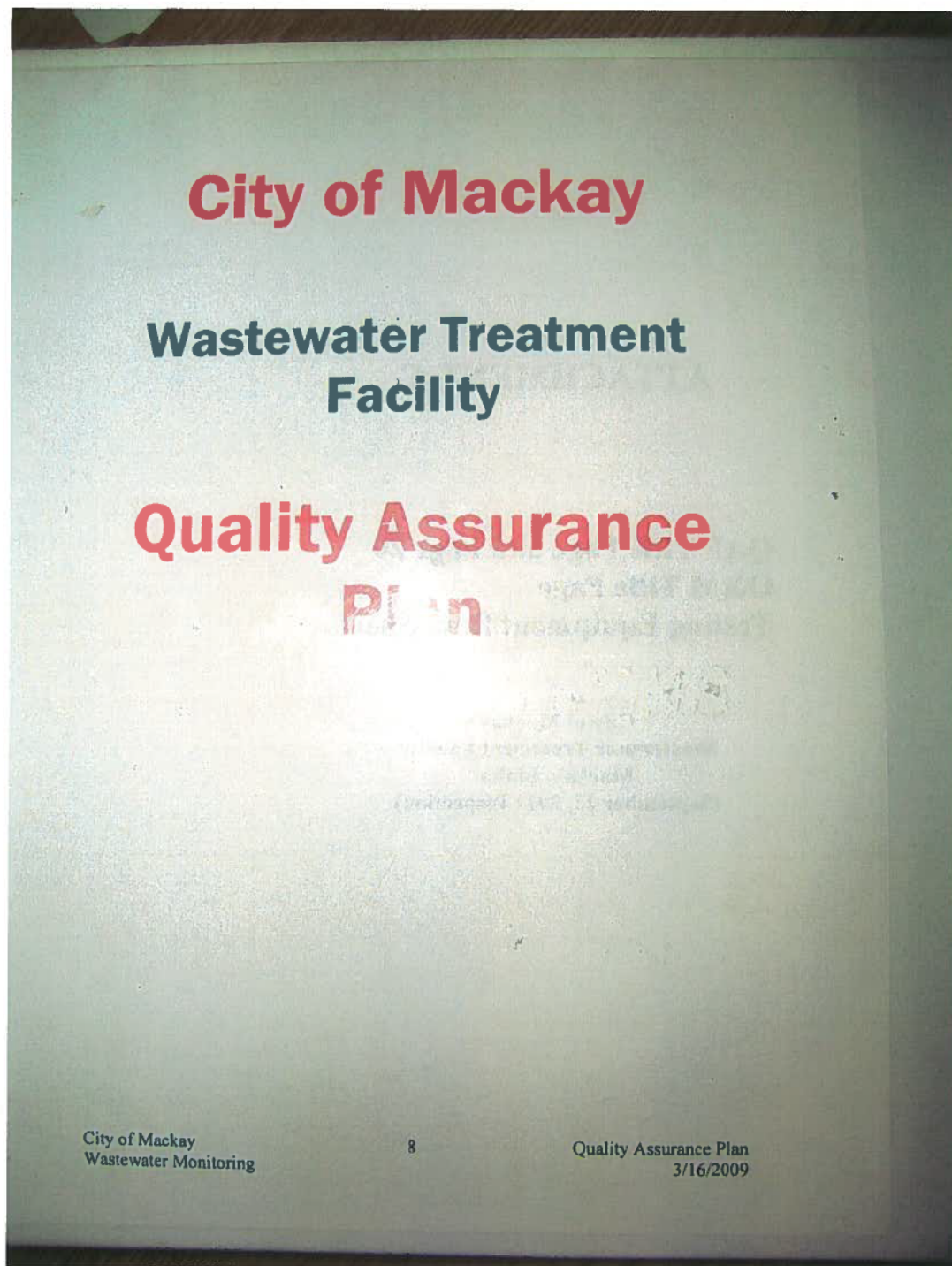




## **ATTACHMENT C**

**QAP Title Page and Page 20  
O&M Title Page  
Testing Equipment Data Sheets**

**City of Mackay  
Wastewater Treatment Facility  
Mackay, Idaho  
(September 22, 2011 Inspection)**



**QAP Title page**

Photographed September 22, 2011

By William Teuscher

Ortho Phosphorous Hach, EPA 365.1	100ml	250ml P	none	48 hrs
pH SM4500H+B (SM Ed. 20 <sup>th</sup> )	100ml	250ml P	none	Immediate
Plants				
Soils				
TCLP				
Total Phosphorous Alpkem, EPA 365.2	100ml	250ml P	H <sub>2</sub> SO <sub>4</sub>	28 days
Total Phosphorous Hach, EPA 365.1	100ml	250ml P	H <sub>2</sub> SO <sub>4</sub>	28 days
Potassium SM3111B (SM Ed. 20 <sup>th</sup> )	1L	1L P	HNO <sub>3</sub>	6 months
Selenium EPA 200.9	1L	1L P	HNO <sub>3</sub>	6 months
Settable Solids EPA 160.5	1L	1L P	Cool 4 C	7 days
Silver SM3111B (SM Ed. 20 <sup>th</sup> )	1L	1L P	HNO <sub>3</sub>	6 months
Silica EPA 370.1	100ml	125 ml P	none	48 hours
Sodium SM3111B (SM Ed. 20 <sup>th</sup> )	1L	1L P	HNO <sub>3</sub>	6 months
Dionex Sulfate EPA 300.0	100ml	125ml P	Cool 4 C	28 days
Sulfide EPA 376.2	100ml	Air tight amber glass	Cool 4 C	Immediate
Surfactants (MBAS) EPA 425.1	300ml	500ml P	Cool 4 C	Immediate
TDS Meter EPA 120.1	1L	1L P	Cool 4 C	7 days
Temperature SM2550B (SM Ed. 20 <sup>th</sup> )	100ml	-	-	Immediate
Thallium EPA 200.9	1L	1L P	HNO <sub>3</sub>	6 months
TKN Gas Diffusion Alpkem PAI-DK03	100ml	250ml P	H <sub>2</sub> SO <sub>4</sub>	28 days
Total Coliform Bacteria/E. coli	150ml	150ml P S	Cool 4 C	30 hrs
a. Chromogenic Substrate SM9223B (19 <sup>th</sup> ed.)	150ml	150ml P S	Cool 4 C	30 hrs
Total Coliform Bacteria/Fecal Coliform Bacteria	150ml	150ml P S	Cool 4 C	30 hrs
a. Membrane filtration SM9222B/SM9221E (19 <sup>th</sup> )	150ml	150ml P S	Cool 4 C	30 hrs
Total Dissolved Solids SM2540C (SM Ed. 20 <sup>th</sup> )	1L	1L P	Cool 4 C	7 days

Magic Valley Labs

Quality Manual February 4, 2005

20

**QAP page 20** (note holding time for E-Coli @ 30 hours)

Photographed September 22, 2011

By William Teuscher



**CITY OF MACKAY, IDAHO**

**Operation and Maintenance Manual**

**for**

**WASTEWATER TREATMENT FACILITY**

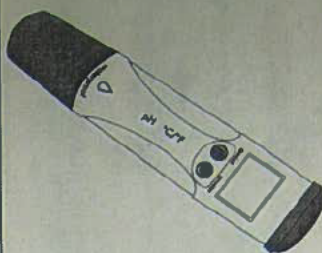
**AUGUST 1988**

**FORSCHER ASSOCIATES, P.A.**

**O&M Title Page** (Photographed September 22, 2011 by William Teuscher)



**HI 98127 - HI 98128**  
**Waterproof**  
**pH & temperature meters**



## PRELIMINARY EXAMINATION

Dear Customer,  
Thank you for choosing a Hanna product. This manual will provide you with the necessary information for correct operation. Please read it carefully before using the meter.  
If you need additional technical information, do not hesitate to e-mail us at [tech@hannainst.com](mailto:tech@hannainst.com).  
These instruments are in compliance with the CE directives.

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your Dealer or the nearest Honno Customer Service Center.

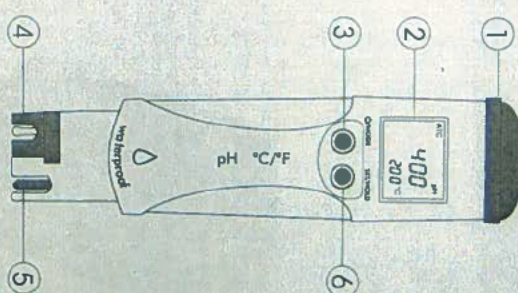
- HI 73127 pH electrode
- HI 73128 Electrode removal tool
- 4 x 1.5V batteries

**Note:** Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

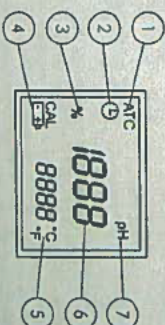
## GENERAL DESCRIPTION

US DESIGN PATENT  
D462,024

## FUNCTIONAL DESCRIPTION

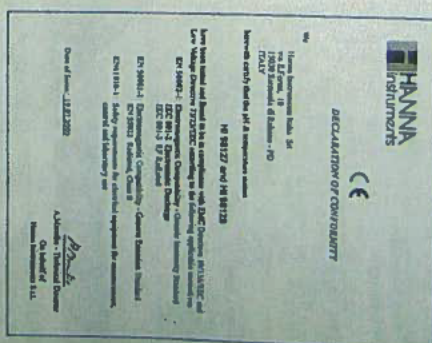


1. Battery compartment
2. Liquid Crystal Display (LCD)
3. ON/OFF/MODE button
4. HI/31.27 pH electrode
5. Temperature sensor
6. SET/HOLD button



1. Automatic temperature compensation indicator
2. Stability indicator
3. Battery life percentage indicator
4. Low battery indicator
5. Secondary display
6. Primary display
7. Measuring unit for primary display

CE DECLARATION  
OF CONFORMITY



### Recommendations for Users

Before using this product, make sure that it is entirely suitable for the environment in which it is used.

The glass bulb at the end of the electrode is sensitive to electrostatic discharges. Avoid touching this glass bulb or oil films.

Any vibration introduced by the user to the supplied equipment may degrade the instrument's EMC performance.

To avoid electrical shock, do not use this instrument when voltages at the measurement surface exceed 24 VAC or 60 VDC. To avoid damages or burns, do not perform any measurement in microwave ovens.

## ACCESSORIES

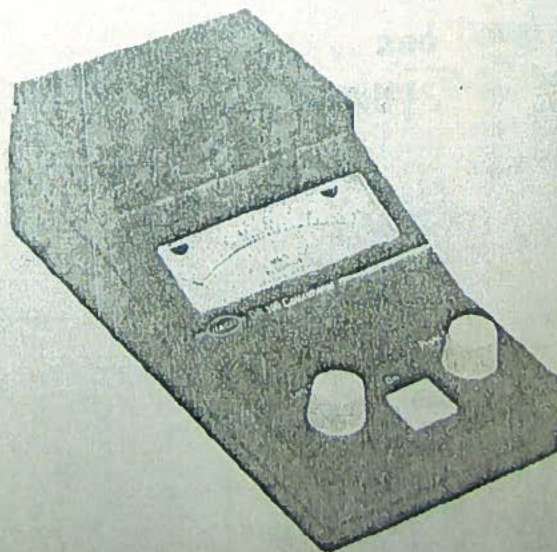
- [illegible]





# DR 100 COLORIMETER

## MANUAL



**Chlorine Residual Tester Data Sheet** (Photographed September 22, 2011 by William Teuscher)

## **ATTACHMENT D**

### **May 18, 2009 EPA Correspondence to City of Mackay And Cover Page of NPDES Permit**

**City of Mackay  
Wastewater Treatment Facility  
Mackay, Idaho  
(September 22, 2011 Inspection)**





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 Sixth Avenue, Suite 900  
Seattle, Washington 98101-3140

MAY 18 2009

Reply to  
Attn of: OWW-130

Kenneth Day  
Public Works Supervisor  
P.O. Box 509  
Mackay, ID 83251-0509

Re: Renewal of National Pollutant Discharge Elimination System (NPDES) Permit  
City of Mackay NPDES Permit No: ID-0023027

Dear Mr. Day:

The Environmental Protection Agency (EPA) received the above referenced NPDES application materials on April 13, 2009. We have completed our review of the application and have determined that it is complete. According to the federal regulation at 40 CFR 122.6(a), when a timely and complete application is received by EPA, and through no fault of the permittee, EPA does not reissue a new permit prior to the expiration date of the existing permit, then the permit remains fully effective and enforceable. Therefore, your existing permit will remain effective and enforceable until a new permit is issued to your facility.

Please note that EPA may request additional information during the development of the draft permit to clarify, modify, or supplement previously submitted material. If you have any questions, please contact the NPDES Permits Unit at (206) 553-0523.

Sincerely,

Michael J. Lidgard, Manager  
NPDES Permits Unit

**May 18, 2009 EPA Correspondence to City of Mackay**  
(Photographed September 22, 2011 by William Teuscher)



United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue  
Seattle, Washington 98101

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et seq., as amended by the Water Quality Act of 1987, P.L. 100-4, the "Act",

The City of Mackay  
P.O. Box 509  
Mackay, Idaho 83251

is authorized to discharge from a wastewater treatment facility located in Mackay, Idaho.

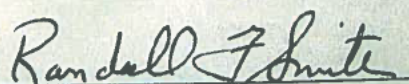
to receiving waters named Big Lost River,

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective June 1, 2004.

This permit and the authorization to discharge shall expire at midnight, May 31, 2009.

Signed this <sup>20th</sup> day of <sup>PM</sup> March 2004

  
Randall F. Smith  
Director  
Office of Water, Region 10  
U.S. Environmental Protection Agency

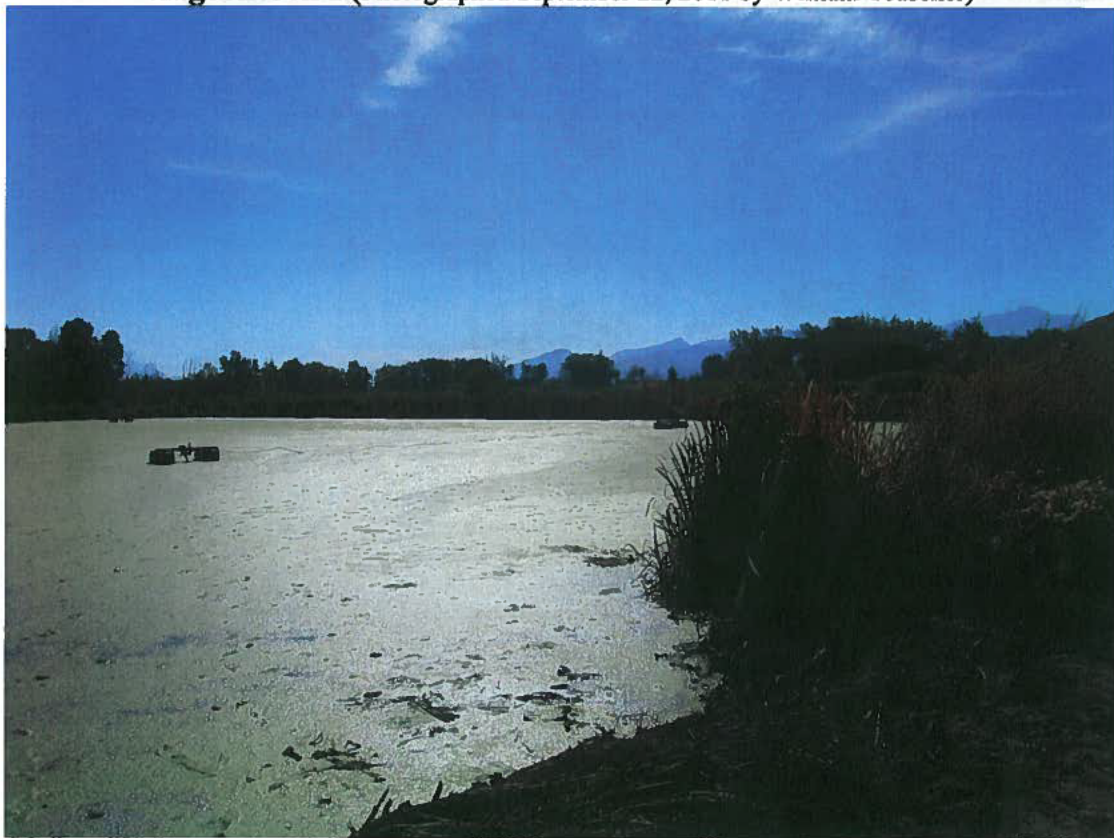
## **ATTACHMENT E**

### **Facility Photograph Documentation**

**City of Mackay  
Wastewater Treatment Facility  
Mackay, Idaho  
(September 22, 2011 Inspection)**



**Lagoon Cell 1** (Photographed September 22, 2011 by William Teuscher)

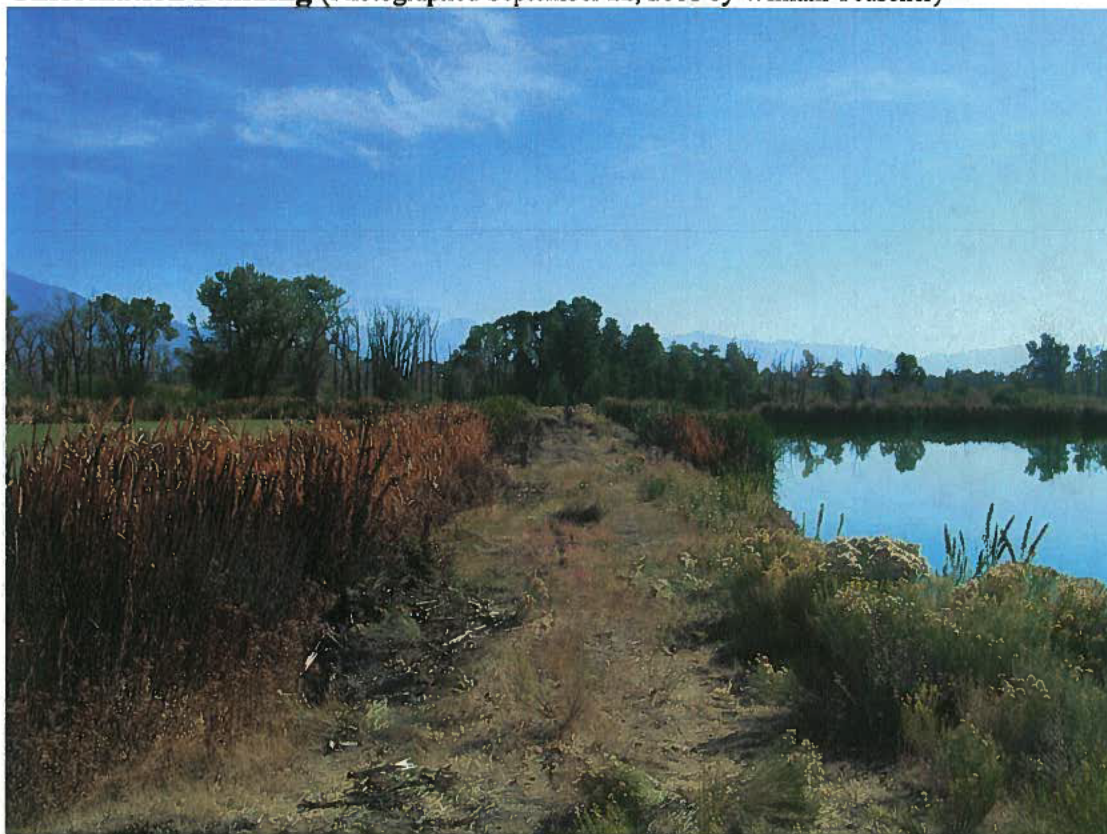


**Lagoon Cell 1** (Photographed September 22, 2011 by William Teuscher)





**Chlorination Building** (Photographed September 22, 2011 by William Teuscher)



**Interior Dike between Cells 1 and 2** (Photographed September 22, 2011 by William Teuscher)





**Lagoon Cell 1 looking from north end of interior dike**  
(Photographed September 22, 2011 by William Teuscher)



**Chlorination room North wall to right**  
(Photographed September 22, 2011 by William Teuscher)





**South wall of Chlorination Building.** (Photographed September 22, 2011 by William Teuscher)



**W&T Chlorinator**  
(Photographed September 22, 2011 by William Teuscher)



**Air Pack**





**Outlet Structure from Lagoon Cell 2 to CL<sub>2</sub> Chamber**  
(Photographed September 22, 2011 by William Teuscher)

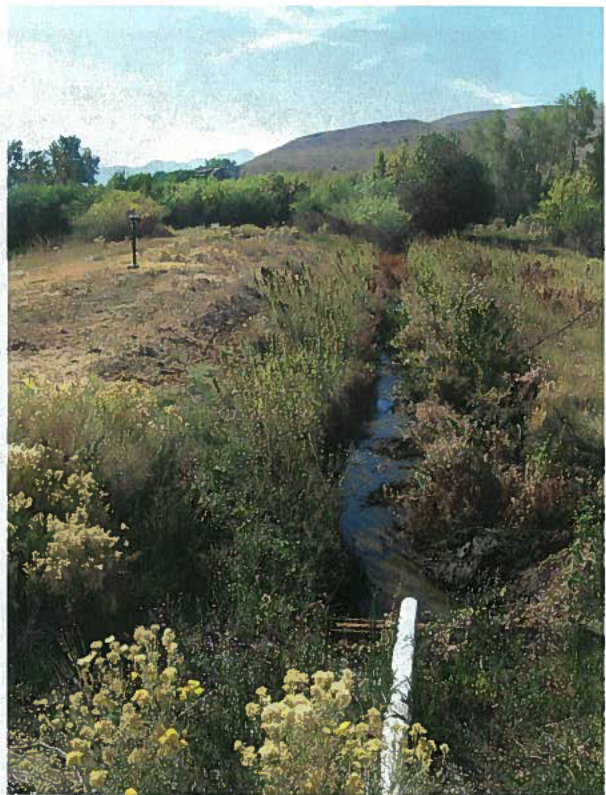


**V-Notch Weir outfall. Note no discharge** (Photographed September 22, 2011 by William Teuscher)





**Effluent pipe from weir structure to open ditch.**  
(Photographed September 22, 2011 by William Teuscher)



**Open effluent ditch flowing to outfall line** (Photographed September 22, 2011 by William Teuscher)





**Terminal end of outfall line to Big Lost River. No current discharge**  
(Photographed September 22, 2011 by William Teuscher)



**Effluent pipe in bottom left corner of photo to Big Lost River**  
(Photographed September 22, 2011 by William Teuscher)





**Evaporation Pan for Lagoon Leak Testing** (Photographed September 22, 2011 by William Teuscher)



**Weather gauge for Lagoon Leak Testing** (Photographed September 22, 2011 by William Teuscher)